



## Response To Office Action Summary

June 25, 2004

Commissioner for Patents

P.O Box 1450

Alexandria VA 22313-1450

Petition to patent examiner Thanh P. Duong:

Pertaining to Office Action Summary, date mailed 06/15/2004, regarding patent application serial number 09/823,018, filed by Gene E. Lightner 03/30/2001, response to Office Action is enclosed within, and is referred by numbers within the Office Action Summary.

Summary is enclosed within and presented by numbers.

Attached to the office communication mailed 06/30/2004 is a stapled plan and summary of a pilot project relating to mailing foreign and U.S. patents. Relationship of this pilot project to the current case is unnecessary and unsolicited.

Acknowledgment that the period for response expires three months from the mailing date of this communication is noted.

### **DETAILED ACTION**

#### **Claim Rejections 35 USC 103**

The requirement outlined within 35 USC 103, have been adhered to.

1. Regarding rejection of claims 1, 7-9 and claims 12-16 of the present application, under 35 USC 103 (a), it is recognized that claims 1-17 are pending in the application and are regarded as unpatentable over Smith, et al., US patent 3,699,218. in view of Clawson, et al., US patent 6,641,625. and Jossen, et al., US patent 6,228,254..

Pertaining to the teachings of Smith, et al. in which a process is disclosed which operates at high pressure, employing centrifugal compression operating at 900 psig to obtain high pressure hydrogen-rich gas. These disclosures are considered unrelated to claim 1 of the present invention. Regarding the topics such as; hydrogen, hydrocarbon, carbon monoxide, steam shifting, adsorption, solvent, scrubbed gas, this subject matter is well known in the published art.. Teachings of Smith, et al., exclude the divulgence of vaporizing heterocyclic compounds, as claimed by claim 1, within the present invention.

Regarding teachings of Clawson, et al., the topics such as; ProX, fuel cell, preheated feed-stock, shift catalyst beds. These topics are acknowledged as contributions within the published art.

To one skilled in the art, motivation to modify the teachings of Clawson, et al., to improve quality of reformat for the ProX, is lacking. These teachings are considered unrelated to claim 1 of the present invention. In regard to teachings of Smith, et al., these topics have been accounted for previously so desire to repeat, is rejected.

Referring to teachings of Jossens et al., these teachings specifically specify that desulfurization of gasoline is the object. Gasoline containing heterocyclic compounds, as disclosed by Jossens, et al., is substantially different than claim 1 of the present invention. Claim 1 of the present invention claims evaporation of heterocyclic compounds, devoid of claiming evaporation of gasoline. Thus it is doubtful, as declared by the examiner, that these teachings are related to claim 1 of the present invention. Accordingly, the view that one having ordinary skill in the art would have an obvious end result, is rejected.

Referring to claim 7 of the present invention; this claim is dependent on independent claim, 1 of the present invention, and therefore this relationship has been established. Pertaining to the absorption of carbon dioxide within said claim 7, scrubbing of carbon dioxide is claimed, rather than absorption. Obvious relevance to Smith, et al., as contributed by the examiner, is unclear. Conclusions determined by re Gazda is that reversal of parts is unpatentable and is lacking application to the current case. Pertaining to claims 8-9, these claims are dependent on dependent claim 7 and ultimately on claim 1 the present invention.

Pertaining to claim 12, this claim is dependent on dependent claim 7 and ultimately on claim 1. Furthermore claim 12, describes concentration of hydrogen by a group of absorbents such as activated charcoal, rather than absorption of carbon monoxide, as professed by the examiner.

Regarding claim 13 as based on the teachings of Smith, et al. This claim is dependent on dependent claim 12, and ultimately on claim 1.

Regarding claim 14 as based of the on the teachings of Smith, et al. This claim is dependent on independent claim 1. Claim 14 presents a predictable rate of reformer gas regulated on demand.

Therefore the teachings of Smith, et al., are determined to be an obvious extension, and thus unrelated. Regarding claim 15 as based on the teachings provided above. These teachings specify vaporization of gasoline containing heterocyclic compounds, this claim is substantially unlike the position, claimed by claim 1, within the present invention.

Regarding claim 16, as related to teachings of Clawson, et al. Judgment to combine catalysts, as presented by the examiner, is illogical, as teachings of Clawson, et al. present unlike catalysts. Combination is lacking intention for associating catalysts, and compatibility of catalysts is unclear.

2. With respect to rejection of claims 2-4 of the present application, under 35 USC 103 (a), are regarded as unpatentable over applied references (Smith, et al., '218. in view of Clawson, et al. '625. and Jossen, et al., '254) as applied to claim 1 above, and further in view of Golden, et al. 5,531,809 and admitted prior art (admission). Inasmuch as Golden, et al. in claim 1, claims "absorbing carbon monoxide from a feed gas" (pressurized and absorbed by a cuprous compound). In this claim, mention of a cuprous solvent is lacking. Whereas claim 1, of the present application, claims include "a solvent capable of dissolving carbon monoxide." Therefore, these claims are substantially different. It is noticed that the examiner is misguided for reversing the terms inorganic and organic. These terms are employed correctly in the admission, page 3, lines 6-13.

The certainty that the present invention, claim 1, is both novel and unobvious to one skilled in the art has been accordingly established.

3. With respect to rejection of claim 5 of the present application, under 35 USC 103(a), are regarded as unpatentable over applied references (Smith, et al., '218. in view of Clawson, et al., '625. and Jossen, et al., '254) as applied to claim 1 above, and further in view of Vadalín. (6,599,491). In view of the teachings of Vadalín. '491, within the abstract and claim 1, the position that carbon monoxide, recycled to a converter to enhance hydrogen production, is established. Application of these teachings to claim 1, of the present application. is inapplicable, as said claim 1 deals with the gas produced from heterocyclic compounds. Accordingly, it is unclear why these teachings are regarded as an obvious extension. The fact that the present invention, claim 1, is both novel and unobvious to one skilled in the art has been established previously.

4. With respect to rejection of claim 10 of the present application, under 35 USC 103(a), is regarded as unpatentable over applied references (Smith, et al., '218. in view of Clawson, et al., '625. and Jossen, et al., '254) as applied to claim 7 above, and further in view of Fuiderer (4,553,981). Regarding the topic of separating carbon dioxide, this subject-matter was contributed above under dependent claim, 7 and ultimately on independent claim 1, so redundancy is needless. The proposition that scrubbing liquid is regenerated and available for regenerating the absorber is obvious, and is unrelated to dependent claim 1.

5. With respect to rejection of claim 6 and claim 11 of the present application, under 35 USC 103(a), and regarded as unpatentable over applied references (Smith, et al., '218. in view of Clawson, et al., '625. and Jossen, et al., '254) as applied to claim 7 above, and further in view of Lin, et al. (6,207,132). Teachings of Lin, et al., include; (hydrogen to power fuel cells within a vehicle) are

substantially different than matter claimed within independent claim 1. Application of these teachings to claim 1, of the present application. is inapplicable, as said claim 1 deals with the gas produced from heterocyclic compounds. Accordingly, it is unclear why these teachings are regarded as an obvious extension. To summarize claims alluded to previously, the following is presented; Dependent claim 6 depends on independent claim 1, and dependent claim 11 depends on dependent claim 7 and ultimately on independent claim 1.

6. With respect to rejection of claim 17 of the present application, under 35 USC 103(a), is regarded as unpatentable over applied references (Smith, et al., '218. in view of Clawson, et al., '625. and Jossen, et al., '254) as applied to claim 1 above, and further in view of Lightner, (6,007,636). Teachings of Lightner, include; (hydrolysis of biomass for formation of heterocyclic compounds as an alternative fuel in lieu of petroleum crude oil). These teachings are substantially different than matter claimed within independent claim 1. Application of these teachings to claim 1, of the present application. is inapplicable, as said claim 1 deals with the gas produced from heterocyclic compounds. Accordingly, it is unclear why these teachings are regarded as an obvious extension.

### **Conclusions**

Concerning this communication from the examiner, an inquiry is unforeseen at this time  
The examiner has failed to establish relevance to claim 1 of the present application.  
The conclusion is that the present invention is recognized as both novel and unobvious.